

**Notice of Allowability**

Application No.

10/724,386

Examiner

Jason C Olson

Applicant(s)

TU ET AL.

Art Unit

2651

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10/12/2004.
2. ☒ The allowed claim(s) is/are 1-30.
3. ☒ The drawings filed on 26 November 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- \* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date <u>10/12/04, 11/26/03</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment                              |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material   | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|  | 9. <input type="checkbox"/> Other _____   |

### REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance: Claims 1-30 are allowed as the prior art, in particular Ang et al. (US 2004/0245950), Nishida et al. (US 5,218,491), or Grace (US 5,038,232), do not teach or suggest the applicant's invention. Claims 1 and 16 teach a method and apparatus for a disk drive. The distinguishing elements of the claims teach a spindle motor for rotating the disk at an operating speed in response to a spindle control current, the spindle motor comprising a plurality of windings which generate a back electromotive force (BEMF) voltage; a BEMF detector for generating a BEMF signal by comparing the BEMF voltage to a threshold; and a disk controller for: measuring a BEMF speed error responsive to the BEMF signal during a BEMF spindle speed control mode; updating the spindle control current in response to the BEMF speed error to drive the disk at the operating speed; measuring a wedge-to-wedge time representing a time period between each servo wedge; calibrating a reference time period representing an accumulation of a predetermined number of wedge-to-wedge times while the BEMF speed error is substantially zero; switching to a wedge spindle speed control mode; measuring a wedge time period representing an accumulation of a predetermined number of wedge-to-wedge times; generating a wedge speed error representing a difference between the reference time period and the wedge time period; and maintaining the disk at the operating speed by updating the spindle control current in response to the wedge speed error.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason C Olson whose telephone number is (571)272-7560. The examiner can normally be reached on Monday thru Thursday 7:30-5:30; alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Hudspeth can be reached on (571)272-7843. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JCO

February 18, 2005



**DAVID HUDSPETH  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600**